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=> s duckweed and transgenic

L1 15 DUCKWEED AND TRANSGENIC

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L2 13 DUP REM L1 (2 DUPLICATES REMOVED)

=> d 1-13 ti

- L2 ANSWER 1 OF 13 CAPLUS COPYRIGHT 2002 ACS
- TI Regulation of glutamic acid decarboxylase activity in **transgenic** plants for improved .gamma.-aminobutyric acid production and tolerance of plant stress
- L2 ANSWER 2 OF 13 CAPLUS COPYRIGHT 2002 ACS
- TI Sequence of Douglas fir luminal binding protein gene promoter PmBiPPro1 and uses in transgene expression in plants
- L2 ANSWER 3 OF 13 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 1
- TI Transient transformation of Wolffia columbiana by particle bombardment
- L2 ANSWER 4 OF 13 CAPLUS COPYRIGHT 2002 ACS
- TI Transgenic plants having increased methionine content due to reduction of threonine synthase activity
- L2 ANSWER 5 OF 13 CAPLUS COPYRIGHT 2002 ACS
- TI Expression of multiple genes in a single operon in plants and uses as insecticides and in degrading inorganic or organic metal compounds in soil and water
- L2 ANSWER 6 OF 13 CAPLUS COPYRIGHT 2002 ACS
- TI Adenosine phosphosulfate reductase cDNA-expressing transgenic plants enriched in cysteine and glutathione content
- L2 ANSWER 7 OF 13 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 2
- TI Genetic transformation of duckweed Lemna gibba and Lemna minor
- L2 ANSWER 8 OF 13 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
- TI A transient transformation system for duckweed (Wolffia

columbiana) using Agrobacterium-mediated gene transfer.

- L2 ANSWER 9 OF 13 CAPLUS COPYRIGHT 2002 ACS
- TI Ligand-gated ion channel GLR4 from Arabidopsis thaliana and methods of regulating plant metabolism
- L2 ANSWER 10 OF 13 CAPLUS COPYRIGHT 2002 ACS
- TI Methods and compositions for production of multimeric proteins in transgenic plants
- L2 ANSWER 11 OF 13 CAPLUS COPYRIGHT 2002 ACS
- TI Methods for producing and recovering heterologous polypeptides from transgenic plants
- L2 ANSWER 12 OF 13 CAPLUS COPYRIGHT 2002 ACS
- TI Light-inducible plant nucleoside diphosphate kinase (NDK) and cloning of cDNA encoding NDK from Pisum sativum
- L2 ANSWER 13 OF 13 CAPLUS COPYRIGHT 2002 ACS
- TI Phytochrome regulation of transcription: biochemical and genetic approaches
- => d so
- L2 ANSWER 1 OF 13 CAPLUS COPYRIGHT 2002 ACS
- SO PCT Int. Appl., 63 pp. CODEN: PIXXD2
- => d pi
- L2 ANSWER 1 OF 13 CAPLUS COPYRIGHT 2002 ACS
  PATENT NO. KIND DATE APPLICATION NO. DATE

  PI WO 2002038736 A2 20020516 WO 2001-US47447 20011107

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- ANSWER 2 OF 13 CAPLUS COPYRIGHT 2002 ACS L2PATENT NO. KIND DATE APPLICATION NO. DATE \_\_\_\_\_ ----\_\_\_\_\_ WO 2002012517 A1 20020214 WO 2000-CA941 20000817 2002012517 A1 20020214 WO 2000-CA941 20000817

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     ANSWER 8 OF 13 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
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     Journal of Applied Botany, (August, 2001) Vol. 75, No. 3-4, pp. 107-111.
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     ISSN: 0949-5460.
=> d 9 so
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     ANSWER 9 OF 13 CAPLUS COPYRIGHT 2002 ACS
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1.2
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     Biol. Action), 167-79
     CODEN: NASBE4; ISSN: 1010-8793
=> d 12 ab
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ANSWER 12 OF 13 CAPLUS COPYRIGHT 2002 ACS

L2

Red light-inducible plant nucleoside diphosphate kinase (NDK) is purified from rice (Oryza sativa) and other plants. Light-induced phosphorylation of the 15-kDa NDK is obsd. in Oryza sativa, Pisum sativum strain Alaska, Arabidopsis thaliana, Triticum aestivum, and Hordeum vulgare. The cDNA encoding NDK is also isolated from P. sativum and its amino acid sequence deduced. Existence of the NDK-coding gene is also obsd. in a wide range of monocots and dicots. The gene can be used for breeding transgenic plants with improved productivity and quality.

=> d 13 ab

L2 ANSWER 13 OF 13 CAPLUS COPYRIGHT 2002 ACS

AB Phytochrome-regulated expression of reporter genes attached to Lemna gibba phytochrome-regulated promoters was obsd. after Agrobacterium-mediated transformation of tobacco and biolistic transformation of Lemna fronds. The regulation of gene expression by phytochrome in L. gibba and Arabidopsis is reviewed.

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L4 26 DUP REM L3 (0 DUPLICATES REMOVED)

=> d 1-10 ti

- L4 ANSWER 1 OF 26 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
- TI Transient transformation of Wolffia columbiana by particle bombardment.
- L4 ANSWER 2 OF 26 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
- TI Phytotoxicity and ultrastructural effects of gymnopusin from the orchid Maxillaria densa on duckweed (Lemna pausicostata) frond and root tissues.
- L4 ANSWER 3 OF 26 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
- TI Phytoremediation kinetics: Removal of 2,4,5-trichlorophenol with Lemna minor.
- L4 ANSWER 4 OF 26 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
- TI Genetic transformation of duckweed Lemna gibba and Lemna minor.
- L4 ANSWER 5 OF 26 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
- TI A transient **transformation** system for duckweed (Wolffia columbiana) using Agrobacterium-mediated gene transfer.
- L4 ANSWER 6 OF 26 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
- TI Genetically engineered duckweed.
- L4 ANSWER 7 OF 26 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
- TI Uptake and phytotransformation of o,p'-DDT and p,p'-DDT by axenically cultivated aquatic plants.
- L4 ANSWER 8 OF 26 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
- TI Uptake and phytotransformation of organophosphorus pesticides by axenically cultivated aquatic plants.
- L4 ANSWER 9 OF 26 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
- TI Phytotransformations of perchlorate contaminated waters.
- L4 ANSWER 10 OF 26 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
- TI Comparison between algae-based and duckweed-based wastewater treatment: Differences in environmental conditions and nitrogen

#### transformations.

- => d 6 pi
- L4 ANSWER 6 OF 26 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
- PI US 6040498 March 21, 2000
- => d 10 so
- L4 ANSWER 10 OF 26 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
- SO Water Science and Technology, (2000) Vol. 42, No. 10-11, pp. 215-222. print.
  ISSN: 0273-1223.
- => d 10 ab
- L4 ANSWER 10 OF 26 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
- In laboratory-scale batch experiments, duckweed (Limna gibba)-based and AB algae-based wastewater containers have been monitored over 15 days in two experiments with different initial total nitrogen concentrations of 50 (experiment 1) and 100 mg-N/L (experiment 2). Clear differences in environmental conditions were observed. High dissolved oxygen (DO) concentrations were observed in the algae-based, compared to duckweed-based, containers. In the algae-based containers the DO range was between 2.1 to 6.6 mg/L and 1.2 to 4.3 mg/L in experiment 1 and 2, respectively, whereas in the duckweed-based containers DO ranged between 1.1 to 3 mg/l and 0.5 to 2.1 mg/L. Higher pH values were measured in algae-based due to algal photosynthetic activity compared to duckweed-based containers where the duckweed mat prevented sunlight penetration and hence algal development. In algae-based containers, the pH range was 7.9 to 8.6 and 8.1 to 8.4 in experiments 1 and 2, respectively, and 7.3 to 7.5 and 7 to 7.6 in the duckweed-based containers. Depending on initial nitrogen concentrations, duckweed-based containers removed between 42%-62% of total nitrogen and between 56%-95% of Kjeldahl nitrogen from the wastewater, while algae-based containers removed between 45%-48% and 48%-58% of total nitrogen and Kjeldahl nitrogen, respectively. Nitrogen loss, probably due to denitrification and ammonia volatilisation, represents 40% of the total nitrogen content of algae-based and duckweed-based containers. However, in duckweed-based containers only 28% of N-loss was observed in containers with higher initial N-content. This study demonstrates that there were differences in environmental conditions in algae-based and duckweed-based containers, which have caused differences in nitrogen transformation mechanisms.

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- L4 ANSWER 11 OF 26 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
- TI Uptake kinetics of 99Tc in common duckweed.
- L4 ANSWER 12 OF 26 CAPLUS COPYRIGHT 2002 ACS
- TI Methods for the genetic transformation of Lemnaceae with Agrobacterium tumefaciens
- L4 ANSWER 13 OF 26 CAPLUS COPYRIGHT 2002 ACS
- TI Use of transgenic vascular aquatic plants as expression hosts in the manufacture of novel metabolites
- L4 ANSWER 14 OF 26 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
- TI Elimination of phenol by two aquatic plants: Juncus fontanesii (Gay) and Lemna minor L.

- L4 ANSWER 15 OF 26 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
- TI Trifluoroacetate, an atmospheric breakdown product of hydrofluorocarbon refrigerants: Biomolecular fate in aquatic organisms.
- L4 ANSWER 16 OF 26 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
- TI The toxicity of the herbicide metolachlor, some **transformation** products and a commercial safener to an alga (Selenastrum capricornutum), a cyanophyte (Anabaena cylindrica) and a macrophyte (Lemna gibba.
- L4 ANSWER 17 OF 26 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
- TI Present vegetation of the Po plain in Lombardy.
- L4 ANSWER 18 OF 26 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
- TI Utilisation of macrophytes in unconventional sewage treatment plants.
- L4 ANSWER 19 OF 26 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
- TI Allozymic variation in local apomictic populations of Lemna minor (
  Lemnaceae.
- L4 ANSWER 20 OF 26 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
- TI UNCOMMON TYPE OF HYDROXYLATION OF 3-ALKENYL-SUBSTITUTED DERIVATIVES OF CITRONELLOL AND CITRONELLIC ACID BY SPIRODELA-PUNCTATA.
- => d 12 so
- L4 ANSWER 12 OF 26 CAPLUS COPYRIGHT 2002 ACS
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  - CODEN: PIXXD2
- => d 12 pi

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	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
ΡI	DE 19629402	A1	19980205	DE 1996-19629402	19960720
	DE 19629402	C2	19980514		

### => d 13 ab

- L4 ANSWER 13 OF 26 CAPLUS COPYRIGHT 2002 ACS
- AB The use of transgenic vascular water plants as expression hosts for the manuf. of metabolites or macromols. is described. These plants can be grown in fermentors. The preferred hosts are plants of the genus Wolffia, esp. Wolffia arrhiza.

### => d 21-26 ti

- L4 ANSWER 21 OF 26 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
- TI D1-D2 CYTOCHROME B559 COMPLEX FROM THE AQUATIC PLANT SPIRODELA-OLIGORRHIZA CORRELATION BETWEEN COMPLEX INTEGRITY SPECTROSCOPIC PROPERTIES PHOTOCHEMICAL ACTIVITY AND PIGMENT COMPOSITION.
- L4 ANSWER 22 OF 26 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
- TI TRANSFORMATION OF ANDROSTANE DERIVATIVES BY SPIRODELA-OLIGORRHIZA.
- L4 ANSWER 23 OF 26 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
- TI TRANSCRIPTION OF AN ARTIFICIAL RIBOSOMAL RNA GENE IN YEAST.
- L4 ANSWER 24 OF 26 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
- TI EVIDENCE FOR UPTAKE OF PLASMID DNA INTO INTACT PLANTS LEMNA-PERPUSILLA PROVED BY AN ESCHERICHIA-COLI K-12 TRANSFORMATION ASSAY.
- L4 ANSWER 25 OF 26 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
- TI THE EFFECT OF GALACTOSE ON THE GROWTH OF LEMNA-GIBBA.
- L4 ANSWER 26 OF 26 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
- TI CLASSIFICATION OF LAKES IN SOUTHERN SWEDEN ON THE BASIS OF THEIR MACROPHYTE COMPOSITION BY MEANS OF MULTI VARIATE METHODS.

# => d 22 ab

- L4 ANSWER 22 OF 26 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
- AB Spirodela oligorrhiza (duckweed) is capable of transforming some steroids of the androstane series. Hydrolysis of the acetates of testosterone and of 3.beta.-hydroxyandrost-5-en-17-one by this species yielded the corresponding alcohols. Further transformation of testosterone and reduction of androst-4-ene-3,17-dione indicated the interconversion of the hydroxyl-ketone function on C-17 and reduction of the .DELTA.4-double bond to the trans-A/B system. Only a trace amount of 3.beta.-hydroxyandrost-5-en-17-one-underwent further transformation.
- => s (duckweed or lemnaceae) and agrobacterium
  L5 9 (DUCKWEED OR LEMNACEAE) AND AGROBACTERIUM
- => dup rem 15
  PROCESSING COMPLETED FOR L5
  L6 8 DUP REM L5 (1 DUPLICATE REMOVED)
- => d 1-8 ti
- L6 ANSWER 1 OF 8 CAPLUS COPYRIGHT 2002 ACS

- TI Immunoglobulin binding protein arrays in plant cells
- L6 ANSWER 2 OF 8 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 1
- TI Genetic transformation of duckweed Lemna gibba and Lemna minor
- L6 ANSWER 3 OF 8 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
- TI A transient transformation system for duckweed (Wolffia columbiana) using Agrobacterium-mediated gene transfer.
- L6 ANSWER 4 OF 8 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
- TI Genetically engineered duckweed.
- L6 ANSWER 5 OF 8 CAPLUS COPYRIGHT 2002 ACS
- TI Methods for the genetic transformation of Lemnaceae with Agrobacterium tumefaciens
- L6 ANSWER 6 OF 8 CAPLUS COPYRIGHT 2002 ACS
- TI Transformation of duckweed (Lemna) plants with ballistic bombardment, electroporation, or Agrobacterium vectors
- L6 ANSWER 7 OF 8 CAPLUS COPYRIGHT 2002 ACS
- TI Simple (bench-top) bioassays and the isolation of new chemically diverse antitumor and pesticidal agents from higher plants
- L6 ANSWER 8 OF 8 CAPLUS COPYRIGHT 2002 ACS
- TI Phytochrome regulation of transcription: biochemical and genetic approaches
- => d 8 so
- L6 ANSWER 8 OF 8 CAPLUS COPYRIGHT 2002 ACS
- NATO ASI Series, Series H: Cell Biology (1991), 50 (Phytochrome Prop. Biol. Action), 167-79
  CODEN: NASBE4; ISSN: 1010-8793
- => d 7 so
- L6 ANSWER 7 OF 8 CAPLUS COPYRIGHT 2002 ACS
- Recent Advances in Phytochemistry (1999), 33 (Phytochemicals in Human Health Protection, Nutrition and Plant Defense), 89-132 CODEN: RAPHBE; ISSN: 0079-9920
- => d 7 ab
- L6 ANSWER 7 OF 8 CAPLUS COPYRIGHT 2002 ACS
- A review with 132 refs. Four simple (bench-top) bioassays are serving well for the detection and fractionation monitoring of new plant antitumor and pesticidal agents. These are: (1) lethality to the larvae of brine shrimp (Artemia salina); (2) the inhibition of crown gall tumors, induced by plasmid transfer and expression from Agrobacterium tumefaciens, on disks of potato (Solanum tuberosum) tubers; (3) the inhibition or stimulation of frond proliferation of duckweed (Lemna minor); and (4) lethality to the larvae of yellow fever mosquitoes (Aedes aegyptii). Since 1984, over 320 chem. diverse bioactive plant components have been isolated and characterized in our lab. by using these methods. Recently, bioactive compds. from the Meliaceae, Lauraceae, Euphorbiaceae, Laminaceae, and other plant families have been isolated, but our most exciting leads have been with the potent acetogenins from the Annonaceae; these compds. are powerful inhibitors of mitochondrial electron transport systems and of the NADH oxidase that is prevalent in the plasma membranes of tumorous cells. The consequence is ATP depletion, and this is esp. toxic to multiple drug resistant tumor cells and

pesticide resistant insects that possess ATP-dependent xenobiotic efflux systems. Structural activity relationship studies (in mitochondrial prepns. and against mosquito larvae) help to define the optimum structural features. This paper has presented the chem. and biol. testing results of 207 plant components recently isolated using the simple bioassays described followed by cytotoxicity testing in a panel of six human tumor cell lines.

#### => d 6 so

L6 ANSWER 6 OF 8 CAPLUS COPYRIGHT 2002 ACS SO PCT Int. Appl., 106 pp. CODEN: PIXXD2

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ANSWER 6 OF 8 CAPLUS COPYRIGHT 2002 ACS
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ANSWER 6 OF 8 CAPLUS COPYRIGHT 2002 ACS

Methods and compns. are provided for the efficient transformation of duckweed by either ballistic bombardment, electroporation, or Agrobacterium. In this manner, any gene or nucleic acid of interest can be introduced and expressed in duckweed plants.

Transformed duckweed plants, cells, tissues are also provided.

Transformed duckweed plant tissue culture and methods of producing recombinant proteins and peptides from transformed duckweed plants are also disclosed.

# => d 5 so

L6 ANSWER 5 OF 8 CAPLUS COPYRIGHT 2002 ACS SO PCT Int. Appl., 58 pp. CODEN: PIXXD2

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L6	ANSWER 5 OF 8	CAPLUS	COPYRIGHT 2002	ACS	
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PΙ	WO 9919497	A1	19990422	WO 1997-IL328	19971010

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=> d 4 pi
     ANSWER 4 OF 8 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
     US 6040498 March 21, 2000
=> d 3 so
     ANSWER 3 OF 8 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
     Journal of Applied Botany, (August, 2001) Vol. 75, No. 3-4, pp. 107-111.
     print.
     ISSN: 0949-5460.
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     ANSWER 1 OF 1 CAPLUS COPYRIGHT 2002 ACS
     Methods for the genetic transformation of Lemnaceae with
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     ANSWER 1 OF 1 CAPLUS COPYRIGHT 2002 ACS
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